IN THE CLAIMS

1-22. (Canceled)

23. (New) Perpendicular magnetic recording media, comprising:

a non-magnetic substrate;

an underlayer provided on the substrate having predetermined permeability characteristics;

a first perpendicular magnetic recording layer provided with perpendicular magnetic anisotropy on the underlayer, which has ferromagnetic grains surrounded with non-magnetic boundaries so that the magnitude of magnetic exchange interaction between the grains is substantially zero; and

a second perpendicular magnetic recording layer provided with perpendicular magnetic anisotropy on the first perpendicular magnetic recording layer, which has a polycrystalline structure including ferromagnetic grains wherein boundaries thereof are non-magnetic to make magnetic exchange interaction between grains larger than that in the first perpendicular magnetic recording layer.

24. (New)   Perpendicular magnetic recording media according to claim 23, wherein:

an exchange stiffness constant between grains of the first recording layer is 0.05×10^{-11} J/m or less; and

an exchange stiffness constant between grains of the second recording layer is in a range of 0.15×10^{-11} J/m to 0.8×10^{-11} J/m.

25. (New)   Perpendicular magnetic recording media according to claim 24, wherein the magnetic anisotropy constant of the second recording layer is in a range of 2.5×10^5 J/m^3 to 4.5×10^5 J/m^3.

26. (New)   Perpendicular magnetic recording media according to claim 23, wherein the underlayer comprises Ni-Fe.

27. (New)   Perpendicular magnetic recording media according to claim 23, wherein:

a sum of a thickness of the first recording layer and a thickness of the second recording layer is 10 to 100 nm; and

a ratio of the thickness of the second recording layer is in range of 0.5 to 1.0.

28. (New)   Perpendicular magnetic recording media

according to claim 27, wherein the first recording layer and

the second recording layer are alternately laminated as multi-

layers.

29. (New)   Perpendicular magnetic recording media,

comprising:

a non-magnetic substrate;

an underlayer provided on the substrate having

predetermined permeability characteristics;

a first perpendicular magnetic recording layer

provided with perpendicular magnetic anisotropy on the

underlayer, and having ferromagnetic grains, wherein

boundaries thereof are non-magnetic to make magnetic exchange

interaction between grains substantially zero so that magnetic

domains are made relatively smaller and media noise is

reduced; and

a second perpendicular magnetic recording layer

provided with perpendicular magnetic anisotropy on the first

perpendicular magnetic recording layer and having a

polycrystalline structure including ferromagnetic grains,

wherein boundaries thereof are non-magnetic to make magnetic

exchange interaction between grains larger than that in the first recording layer so that stable properties against thermal fluctuation are acquired.

30. (New) Perpendicular magnetic recording media according to claim 29, wherein:

an exchange stiffness constant between grains of the first recording layer is 0.05×10^{-11} J/m or less; and

an exchange stiffness constant between grains of the second recording layer is in a range of $0.15 \times 10\text{-}11$ J/m to $0.8 \times 10 \text{ -}11$ J/m.

31. (New) Perpendicular magnetic recording media according to claim 30, wherein the magnetic anisotropy constant of the second recording layer is in a range of 2.5×10^5 J/m^3 to 4.5×10^5 J/m^3.

32. (New) Perpendicular magnetic recording media according to claim 29, wherein the underlayer comprises Ni-Fe.

33. (New) Perpendicular magnetic recording media according to claim 29, wherein:

a sum of thickness of the first recording layer and a thickness of the second recording layer is 10 to 100 nm; and

a ratio of the thickness of the second recording layer is in range of 0.5 to 1.0.

34. (New) Perpendicular magnetic recording media according to claim 33, wherein the first recording layer and the second recording layer are alternately laminated as multi-layers.